THE DESERT CROSSING OF HSÜAN-TSANG, 630 A.D.

Sir AUREL STEIN K.C I.E

(*From 'The Geographical Journal' for November* 1919)

With Kindest regards of
A. Stein

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THE DESERT CROSSING OF HSÜAN-TSANG, 630 A.D.

Sir Aurel Stein, K.C.I.E.

IT was on my second Central-Asian expedition, in the autumn of 1907, that I travelled across the stony "Gobi" of the Pei-shan by the desert track which leads from the oasis of An-hsi to Hami and serves as the Chinese high-road connecting westernmost Kan-su with the province of *Hsin-chiang*, the "New Dominion," or Chinese Turkestan. I knew at the time that I was following that ancient "Northern Route," which, ever since the Chinese had first acquired a firm foothold at Hami in 73 A.D., had been used by them as a main line of access to their Central-Asian dominions whenever they were able to assert political or military control over those distant territories. This knowledge then helped to reconcile me to the fact of having been obliged by practical considerations to choose a route which since the days of Prjevalsky has been followed by more than one European traveller, and which in its great wastes of crumbling rock and gravel offers but little chance for new observations of interest.

But it was not until I came to deal with this ground in 'Serindia,' the detailed report on the scientific results of my second Central-Asian journey, completed in 1918 and, I hope, soon to be published by the Oxford University Press, that I paid adequate attention to the circumstances which give this desolate desert track a claim upon the special and quasi-personal interest of the student of the historical geography of Central Asia. It arises from a celebrated episode in the life of the great Chinese pilgrim Hsüan-tsang, our Buddhist Pausanias and Marco Polo combined, to whose travels from China across Central Asia to India and back in the second quarter of the seventh century A.D. we owe such ample and so important records on the geography, history, antiquities, etc., of the vast regions he traversed. I mean the adventurous desert journey by which the pious traveller about the beginning of 630 A.D. made his escape from the jealously guarded north-west border of the Chinese Empire, as it then stood, into those "Western Regions" he was about to explore in his eager search for the sacred Law of Buddhism.

The story of this great adventure, which nearly caused Hsüan-tsang to

perish of thirst in the desert, has not hitherto been examined in the light of exact topographical knowledge. It is not to be found in Hsüan-tsang's own 'Hsi-yü-chi,' or 'Records of the Western Countries' (these do not take up the relation until his start westwards from Turfan), but only in Hsüan-tsang's 'Life,' a work originally compiled by his disciple Hui-li and edited later under conditions which were bound to impair the critical value of its text.* Hence doubts as to the accuracy of the details contained in this narrative might well have arisen, particularly in view of the supernatural tinge which the story as related by the devout biographer imparts to certain incidents connected with the great pilgrim's quasi-miraculous rescue when lost in the waterless desert and faced by imminent death through thirst and exhaustion.

All the more interesting is the close agreement which a careful examination reveals between all precise details of the story and the topographical facts ascertained in the course of our survey from the tract of An-hsi to Hami. This exact agreement affords striking evidence of the faithfulness with which Hsüan-tsang himself must have remembered and related this famous initial episode of his wanderings. It helps to confirm afresh the subjective trustworthiness of his records, and as we have to use these so often when dealing with questions of ancient geography in Central Asia or India, the following notes on Hsüan-tsang's desert itinerary may find an appropriate place here.

Before, however, we attempt to trace the pious traveller's steps, it will be well to indicate briefly certain main topographical facts concerning his starting-point, the oasis of An-hsi, and as regards the ground which the present high-road thence to Hami traverses. In chapters xv. and xxvii. of my 'Serindia' I have had occasion fully to discuss the broad geographical features which have obliged the Chinese from the earliest expansion of their power westwards, in the last quarter of the second century B.C., down to the present day, to follow the north foot of the snowy Nan-shan as their main line of progress towards Central Asia. There alone can be found a succession of relatively well-watered fertile tracts, stretching from Liang-chou past Kan-chou to Su-chou, such as could serve as a secure base for trade and military movements across the great deserts intervening between Kan-su and Chinese Turkestan. Beyond Su-chou, where the mediæval Great Wall of the Empire ends, this line thins out westwards into a series of small oases, comprising the present Yü-mên-hsien, An-hsi, and Tun-huang. These are situated in the wide but for the most part utterly barren valley in which the lower course of the Su-lo Ho descends to its terminal basin in the desert east of the ancient Lop Sea bed. Map I. attached to my 'Ruins of Desert Cathay,' and first published in the

* Cf. Stanislas Julien, 'Histoire de la vie de Hiouen-thsang,' preface, pp. lxxvi. *sqq.*, regarding the conditions under which the text of the biography, originally compiled by the monk Hui-li, was recovered and edited.

Geographical Journal for March 1911 to illustrate the explorations of my second journey, will help to make clear these essential features.

As long as Chinese trade and military enterprise towards the Tarim Basin could continue the move westwards in a straight line along that earliest route which led through the clay and salt wilderness of the dried-up Lop Sea to the ruined Lou-lan settlements, and which I succeeded in tracking right through by my Lop Desert explorations of 1914–15,* Tun-huang, the last oasis within the ancient Chinese border of Han times, remained the starting-point and eastern bridgehead as it were for the great desert crossing. But when after the third century A.D. Lou-lan was abandoned to the desert, and this difficult but most direct route became impossible for traffic through total want of water, such intercourse with Central Asia as survived the downfall of Chinese political control over the "Western Regions" was bound to be diverted almost wholly to the routes crossing the Pei-shan "Gobi" to Hami.

Of these routes the one starting from the An-hsi oasis and leading in a nearly straight line north-westwards to the cultivable area of Hami at the southern foot of the Karlik-tagh must certainly have been at all times relatively the easiest and the most frequented. It follows the line on which the distance over absolute desert ground to be covered by travellers from or to China proper is the shortest. It crosses the stony desert of the Pei-shan in eleven marches which our survey showed to aggregate to a total marching distance of about 218 miles. Hami, owing to the irrigation facilities assured by its vicinity to the snows of the Karlik-tagh, has all through historical times been a place noted for its agricultural produce and a natural emporium for whatever traffic passed across the desert south-eastwards. An-hsi has not yet recovered from all the destruction caused by the great Tungan rebellion of the sixties of the last century. But even thus, scanty as its resources now are, they suffice to allow trade caravans and other travel parties to revictual locally. In earlier times they are sure, as plenty of historical evidence shows, to have been considerably greater. What other routes there are, leading from Hami and the eastern extremity of the T'ien-shan towards the border tracts of Kan-su and China proper, all cross the barren wastes of the Pei-shan "Gobi" for considerably greater distances.† As my journey of September 1914 from Mao-mei to

* Cf. for the line of this ancient Lou-lan route "A third journey of exploration in Central Asia, 1913–16," in *Geographical Journal*, 1916, 48, pp. 124–129; also 'Serindia,' chap. xiv., for a review of the Chinese historical notices bearing upon it.

† Such routes leading across the Pei-shan east of the Hami–An-hsi line are indicated in Sheets XXI., XXIII. of the Russian Asiatic Transfrontier Map, 40 versts to 1 inch, partly from the surveys of Russian explorers like Grum Grishmailo and Obrucheff, partly from "native information." A route-line distinct from the above and leading from Hami to the great bend of the Su-lo Ho was followed in 1898 by Prof. Futterer, who has very carefully described it in "Geographische Skizze der Wüste Gobi," Ergänzungsheft No. 139, *Petermanns Mitteilungen*, 1902. This memoir provides a very instructive account of the geology and physiography of the eastern Pei-shan ranges in general.

Of the several route-lines shown by the above Russian map as crossing the Pei-shan

the Karlik-tagh showed (see "A third journey of exploration in Central Asia," *Geographical Journal*, 48, p. 200) they offer the same, if not greater, difficulties about water and grazing.

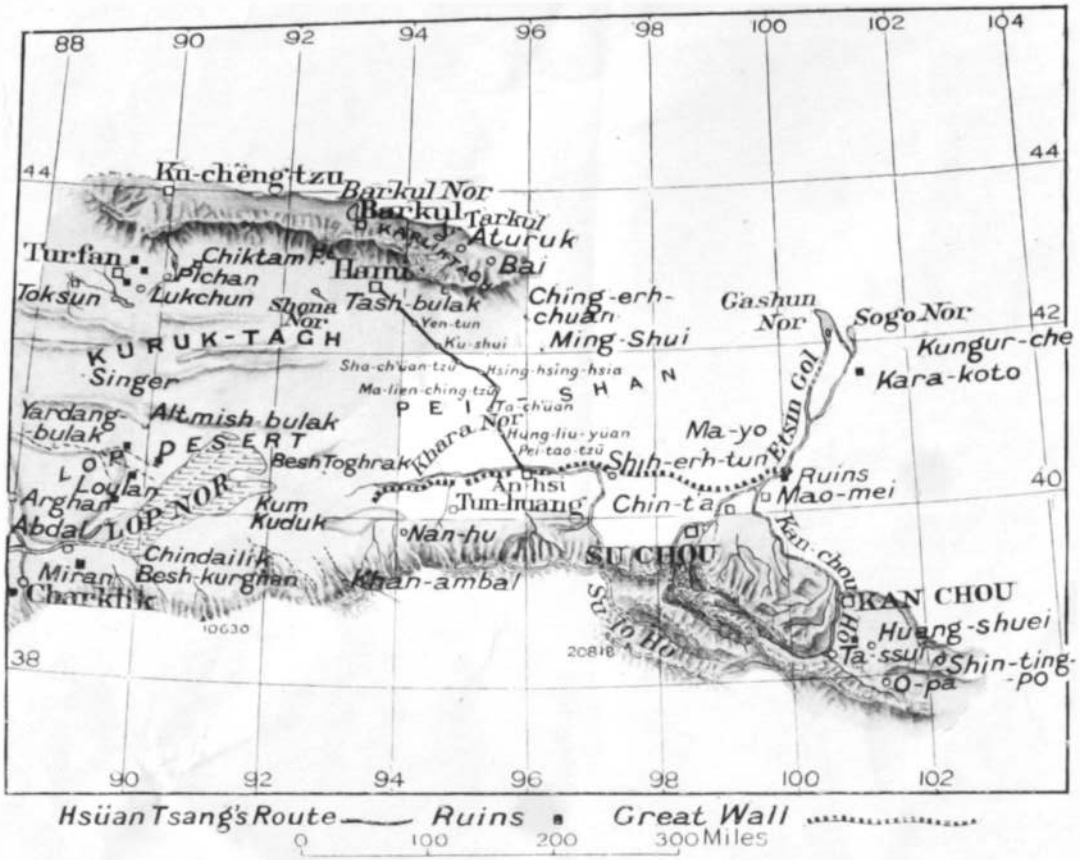
In view of these plain geographical facts it appears to me clear that the importance of the route leading from An-hsi to Hami cannot have undergone any material change during the periods while it was open for Chinese intercourse with Central Asia, and further that its track is not likely to have ever diverged far from the present one. The latter conclusion is all the more justified because, as can be seen from the map attached to 'Desert Cathay' and in fuller detail from sheets reproducing our surveys on the scale of 4 miles to 1 inch,* the actual road, except for a small détour between the springs of Ta-ch'üan and Sha-ch'üan-tzŭ, due to necessities of water supply, leads in what practically is a straight line from An-hsi to the nearest outlying settlement of the Hami oasis.

An-hsi, the ancient *Kua-chou*, where that episode of Hsüan-tsang's travels starts with which we are concerned here, need not detain us long. In my 'Desert Cathay' I have already recorded what observations of its extant conditions I was able to gather during my stays in 1907 (cf. 'Desert Cathay,' 2, pp. 235 *sqq.*). The present *An-hsi-chou*, situated not far from the left bank of the Su-lo Ho, is, in spite of its grand name, "the City of the West-protecting [garrison]," scarcely more than a straggling street within a big enclosure of crumbling walls. It owes its importance, such as it is, solely to being the last halting-place with local supplies on the road to Hami. To the south of the "town" there stretches between the river-course and the foot of the outermost barren hills of the Nan-shan a wide scrub-covered plain, where strips of poor cultivation are broken up by extensive stretches of waste lands. Ruins of walled villages and towns abound in this desolate tract, attesting its former prosperity. Among them the largest and most central still bears the name of *Kua-chou-ch'êng*, "the walled city of Kua-chou," and is known to local tradition as the site of the ancient chief place of the district.† Antiquarian reasons, which I have discussed in 'Serindia,' make it appear highly probable that this tradition is correct, and that we have to locate here the district head-

west of the An-hsi–Hami road only one can be considered as practicable and actually proved to exist. It is the one surveyed by Captain Roborovsky's expedition in 1893, which branches off from the Chinese high-road at K'u-shui, four marches from Hami, and leads due south to Tun-huang. Owing to difficulties about water, etc., it is but rarely followed nowadays, Chinese travellers from the last-named oasis preferring to join the high-road at Hung-liu-yüan, the second station after leaving An-hsi. The existence of the other routes, in view of information collected by Captain Roborovsky and Prof. Pelliot, appears very problematical.

* See Sheets Nos. 73, 76, 77, 80, 81 of the Atlas prepared by the Survey of India for my 'Serindia.' Advance copies of this Atlas were presented early in 1914 under the orders of Surveyor-General of India to the principal geographical institutions of Europe and America.

† See for the exact position of this ruined site and the topography of the An-hsi tract the inset map, on 1/M scale, in Map 1 of 'Desert Cathay.'



MAP SHOWING THE ROUTE OF HSÜAN-TSANG

quarters of Kua-chou, where the 'Life' makes Hsüan-tsang arrive towards the close of 629 A.D.*

The learned Buddhist monk had set out from Ch'ang-an, the Chinese capital, with the avowed object of "travelling to the west to search for the Law in the kingdom of the Brahmans," *i.e.* India. But though the great T'ang Emperor T'ai Tsung (627–650 A.D.) was already engaged on that policy of expansion westwards which was destined before long to reassert Chinese power and authority in the Tarim Basin and even beyond after the lapse of long centuries, the traditional methods of Chinese seclusion against the barbarian West were still rigorously enforced on the Kan-su border. "At that time the administration of the country was still new, and the frontiers of the Empire did not extend far. The people were subjected to severe restrictions, and nobody was permitted to leave in order to visit foreign countries" (cf. Julien, 'Vie de H.,' p. 16).

So Hsüan-tsang had been obliged to leave Liang-chou secretly and to travel to Kua-chou by night marches. After his arrival there "the Master of the Law, on inquiring about the western routes, was told: 'At 50 *li* from here, marching to the north, one comes to the River *Hu-lu*, of which the lower course is wide and the upper one very contracted. Its waters are constantly whirling and flow with such impetuosity that they cannot be passed in a boat. It is near to the widest part that the *Yü-mên* Barrier has been established, by which one is obliged to pass, and which is the key of the western frontiers. To the north-west, beyond this barrier, there are five signal-towers where the guards entrusted with keeping the look-out reside. They are a hundred *li* apart one from the other. In the space which separates them there is neither water nor herbage. Beyond these five towers there lie the desert of *Mo-ho-yen* and the frontiers of *I-wu* (Hami)."

The 'Life' gives a touching account of how the eager pilgrim came to brave the official prohibition and to venture into the dread desert beyond (see Julien, 'Vie de H.,' pp. 17–21). On receiving that information he had first become downcast, and having also suffered the loss of his horse, passed a month in distress. Then the local governor, who happened to be a man of piety, learned from spies of Hsüan-tsang's intentions, showed him secretly their report, but in the end, moved by his sincere fervour, decided to close an eye—*more Sinico*. Still the saintly traveller's troubles increased through the defection of two young monks who were to have accompanied him, and through the difficulty of securing a guide. But auspicious dreams and omens gave him fresh courage, and a devout young native helped him to meet in secret an aged "barbarian" who had done the journey to I-wu fifteen times to and fro. The old man gave

* Cf. Stan. Julien, 'Histoire de la vie de Hiouen-thsang' (Paris, 1853), p. 17; also Beal, 'The Life of Hiuen-tsiang,' p. 13. In subsequent quotations from the 'Life' the version of the great French Sinologue will be followed, from which the latter work is in the main retranslated.

him the grave warning: "The western routes are bad and dangerous. At times streams of drift sand obstruct, at others demons and burning winds. If they are encountered no one can escape. Often big caravans lose themselves and perish."

But Hsüan-tsang remained firm and declared that if he did not reach the country of the Brahmans in the end he would never turn eastward again to China. "If I were to die on the way I should not regret it." Thereupon said the greybeard: "Master, since you are decided to start, you must mount my horse. More than fifteen times already, going and coming, he has done the way to *I-wu* (Hami). He is strong and knows the routes. Your horse, on the contrary, is weak and will never reach there." We shall see further on how important a part this hardy mount, "lean and of russet colour," for which he exchanged his own, was destined to play in the pilgrim's final escape from death in the desert.*

Thus mounted and accompanied by the young native who was to act as guide, Hsüan-tsang started at night from Kua-chou. "In the third watch they came to the river and sighted the *Yü-mên* Barrier from a distance. At 10 *li* from the point where the barrier stood † the upper river-course had its banks not more than a *chang* (10 feet) apart." Here a crossing was effected by a rough foot-bridge which the "young barbarian" improvised with cut-down branches of trees, etc. Then, after resting by the river-bank, they set out with the first rays of the sun. But after going a short distance Hsüan-tsang's companion, frightened by the dangers ahead, refused to venture beyond, and left the brave pilgrim to pursue his adventure alone.

Before we proceed to follow Hsüan-tsang further, it will be convenient to sum up the indications derived from this brief account and from the local information previously reproduced and to compare them with the actual topography of An-hsi. Starting from the town of Kua-chou, the route to *I-wu* or Hami first led north for 50 *li* to the river *Hu-lu*, where the watch-station of *Yü-mên-kuan*, or the "Jade Gate Barrier," was then placed. From this point the route towards Hami turned to the

* The mention of this experienced equine wayfarer seems to me to give a distinct touch of reality to the story as recorded in the 'Life.' Together with other points to be indicated below it creates a presumption in favour of the substantial veracity of the account as received and handed down by Hsüan-tsang's biographers.

At the same time the way in which the 'Life' connects the acquisition of this auspicious mount with a prognostic Hsüan-tsang had received from a diviner before his start from Ch'ang-an, shows the same quaint intermingling of sense of reality and naïve credulity which characterizes the personality of my Chinese "patron saint"—like that of so many of his compatriots, ancient and modern—throughout his own 'Records'; cf., *e.g.*, 'Desert Cathay,' 2, 169 *sq.*, 180.

† I follow here Beal's interpretation; see 'Life of Hiuen-tsiang,' p. 10. Julien's version would imply that the point of crossing was at the barrier itself. But this obviously cannot be the sense intended, since the passage had to be effected secretly. Besides, we have been told before that the Yü-mên Barrier stood where the river was widest, and consequently may be supposed to have been fordable.

north-west and passed towards the five signal-posts maintained in the desert for look-out purposes. Hsüan-tsang, having to avoid the "Jade Gate Barrier" where his unauthorized move beyond the border would have been stopped, set out from Kua-chou at night and reached the river at a point some 10 *li* above the watch-station. Having effected a crossing, unperceived, in the third watch, he thence picked up the track leading to the nearest of the watch-towers, and, as we shall presently see, arrived there after covering 80 *li*.

It is easy to demonstrate the full accord of these indications with the topographical facts as our survey shows them. By the river *Hu-lu* no other but the Su-lo Ho can be meant.* From the ruined town of Kua-chou-ch'êng, which in view of its central position and surviving local tradition may safely be assumed to mark the approximate site of the *Kua-chou* of T'ang times, it is 8 miles almost exactly due north in a straight line to the point where the present road to Hami crosses the Su-lo Ho. If we assume that the river-course in Hsüan-tsang's days lay about 2 miles further to the north where our survey marks an old river-bed, the agreement in distance with the 50 *li* of the 'Life' becomes still closer; for the equation of 5 *li* to the mile is the one which my extensive experience of Hsüan-tsang's distance-reckonings along Central-Asian routes has proved to be the generally correct average. That the road to Hami after leaving the river leads steadily in a north-westerly direction is shown by a look at the map. Finally, the 80 *li* which Hsüan-tsang is said to have covered from the river-crossing to the first watch-tower agree in a striking fashion with the 16 miles or so which the map shows between the above-mentioned old bed and the first halting-place, Pei-tan-tzŭ, with its spring, on the present caravan road.

As to the exact position of the *Yü-mên* Barrier, as located at the time of Hsüan-tsang's departure, I am unable to state anything definite; nor does it affect his itinerary with which we are concerned here. The discoveries made in the course of my explorations of 1907 along the ancient Chinese *Limes* have solved the question as to the original position and remains of this famous frontier station of the "Jade Gate," once far away to the west of Tun-huang,† and there is strong antiquarian reason to believe that even in Hsüan-tsang's times its transfer to the north of Kua-chou could not have been of old date.‡ To the strict watch over all trans-

* This identification with the Su-lo Ho, the Bulungir of the Mongols, was first correctly made by V. de Saint-Martin (cf. Julien, 'Mémoires de Hiouen-thsang,' **2**, p. 202).

† How long the "Jade Gate Barrier" remained near Kua-chou, and when and how the present *Yü-mên-hsien*, between Su-chou and An-hsi came by its designation derived from the ancient frontier station of Han times, is another question which must be left for future investigation (cf. 'Desert Cathay,' **2**, pp. 115 *sqq.*; 'Serindia,' chapter xix., sec. i.-iii.).

‡ A passage of the T'ang Annals referring to the despatch in 610 A.D. of the famous Chinese Commissioner Pei Chü to *Yü-mên-kuan*, distinctly places this frontier "Barrier"

border traffic which was kept in ancient times at this western main gate through the original Great Wall, and which had its close analogy in the procedure observed down to recent times at the Chia-yü-kuan Gate west of Su-chou, I have had repeated occasion to refer elsewhere (see 'Desert Cathay,' 2, pp. 148, 154, 282; 'Serindia,' chap. xxvii., sec. i., ii.).

It will help us better to appreciate the conditions under which Hsüan-tsang's desert-crossing was effected, if we cast a rapid glance at the general aspects of the route as it exists now and at the topographical features distinguishing certain of its stages. To the Chinese, with their strongly fixed notions of civilized existence, this desert route must have at all times been distinctly deterrent, whether they had to face it as soldiers, traders or casual travellers. It was easy to realize this as we moved along from one wretched little roadside station to another, each established with its refuse-filled mud hovels and tiny post of soldiers at a point where some shallow depression offers a scanty supply of water in spring or well. Only here and there do they offer patches of equally scanty grazing on scrub or reeds. The conditions of traffic I was able to observe while moving across the utterly barren wastes of gravel, crumbling rock or drift-sand which extend between these miserable halting-places could certainly have changed but little since ancient times.

The difficulties about securing a sufficiency of reed straw and water for animals, together with the equally great dearth of fuel, must have at all periods seriously hampered the use of the route whether for trade or troop movements. The very trying climatic conditions of the central Pei-shan, with its dreaded north-east blizzards frequent in the winter and spring and with its parching heat and dust-storms in the summer, were always bound to imply grave risks for individual travellers. There is danger for them now too, if unguided, of straying from the track along certain portions, and obviously this risk must have been far greater still during periods when the political seclusion of China prevented all regular traffic.

Uniformly barren and dreary as the ground crossed by the route is, it yet divides itself into certain distinct sections; in the detailed map-sheets accompanying 'Serindia' we can easily make them out, and even the map of 'Desert Cathay' suffices to mark their limits. The first five marches from An-hsi lead across a succession of narrow hill ranges, all striking approximately east to west and rising but little above the wide plateau-like valleys between them. Water is found in springs at the first three stages (Pei-tan-tzŭ, Hung-liu-yüan, Ta-ch'üan), and subsoil drainage is reached by wells, not more than 6 to 8 feet deep, at Ma-lien-ching-tzŭ and Hsing-hsing-hsia. It is probably not without reason that the boundary between the provinces of Kan-su and Hsin-chiang or Chinese Turkestan

at the town of Chin-ch'ang (cf. Chavannes, 'Documents sur les Turcs occidentaux,' p. 18). Chinese antiquarians and local traditions of An-hsi seem to agree in considering Chin-ch'ang as a sub-prefecture dependent on Kua-chou and situated to the east of the present An-hsi. But its exact position still remains to be determined.

is fixed now close to Hsing-hsing-hsia ; for beyond, the character of the ground changes and distinctly for the worse. Much of bare rocky ledges and of detritus is passed on the next two marches to Sha-ch'üan-tzŭ and K'u-shui, there being a steady descent of some 2000 feet from the average level of the preceding stages. Vegetation even of the humblest sort becomes increasingly rare and the water decidedly brackish, as the name of *K'u-shui*, "Bitter Water," rightly indicates.

But it is the next march to the station of Yen-tun which is most dreaded of all by Chinese wayfarers. For a distance of some 35 miles it leads down over absolutely bare gravel slopes into a great depression or trough lying at its bottom some 1500 feet below the level of K'u-shui. Totally devoid of water or shelter of any sort, this long march is attended with risks both on account of the great summer heat here experienced and the icy north-east gales to which it is exposed in the winter and spring. Carcases of transport animals mark the route all the way from K'u-shui ; nor are losses in human lives unknown here. From Yen-tun another march, over similar gravel wastes but much shorter, brings the traveller to the springs of Chang-liu-shui (*Chang-liu-shin* in the 1 : 3,000,000 map is a misreading), at the southern edge of a wide belt of loess ground receiving subsoil water from the snows of the Karlik-tagh and covered with abundant scrub and reed-beds. At Chang-liu-shui the first tiny patch of Hami cultivation is met, and after two more marches the town of Hami or Kumul is reached in the central oasis.

With these topographical features of the route the essential points in the story of Hsüan-tsang's desert journey can be proved to be in close accord. This agreement is all the more remarkable in view of the avowedly imperfect text of Hui-li's 'Life' and the impossibility of checking its statements from Hsüan-tsang's own travel records. A variety of details and personal touches strongly support the impression that Hui-li gathered his graphic account of the desert adventures from the Master's own lips and has reproduced it with faithfulness. We know too much of Hsüan-tsang's pious ardour and naïve credulity to mistrust the few references to supernatural incidents ; they obviously reflect genuine subjective illusions such as conditions of intense strain and real peril were most likely to produce in a mind so devout and fervid.

From Hui-li's narrative of the journey we gather the following main facts (cf. Julien, 'Vie de H.,' pp. 23 *sqq.*; Beal, 'Life of H.,' pp. 18 *sqq.*). Forsaken a short distance beyond the Su-lo Ho, by the "young barbarian" who was to have acted as his guide, the pilgrim moved ahead alone, guiding himself by the bones of dead animals and the droppings of horses along the track. Visions of armed hosts moving in the distance caused him alarm. But seeing them disappear on closer approach, he recognized that they were vain images created by the demons. Obviously mirages are meant such as I frequently observed on my first few marches beyond An-hsi. After covering 80 *li* Hsüan-tsang arrived at the first

signal-tower. In order to pass it unobserved he hid himself until night-fall. When he tried then to replenish his water-bottle from the water near the tower he was shot at with arrows by the men on guard. On declaring himself a monk come from the capital they took him before the commandant of the post.

This, a native of Tun-huang, Wang-hsiang by name, closely examined him. Having verified his identity with the would-be pilgrim in search of the Law, about whom a report had reached him from Liang-chou, he felt pity and gave him a kindly reception. Having failed to persuade him to return, he directed him in the morning to proceed to the *fourth* tower commanded by a relative of his. On arriving there the *same* night Hsüan-tsang passed through a similar experience. He was stopped by an arrow shot by the guard and then taken before the commandant. On receiving the message of Wang-hsiang the officer gave him hospitable welcome, but warned him not to approach the fifth and last watch-tower, as it was held by men of violent disposition. Instead he was advised to go to a spring, a hundred *li* off, called *Yeh-ma-ch'üan*,* "The Spring of the Wild Horses," and to replenish his water supply there.

"A short distance from there he entered the desert called *Mo-ho-yen*, which has a length of 800 *li* and which in ancient times was called *Sha-ho*, or the 'River of Sand.' One sees there neither birds nor quadrupeds, nor water nor pasture." In this desert the pious traveller was troubled again by demonic visions, *i.e.* mirages, from which he protected himself by reading his favourite sacred text, the Prajña-paramita Sutra. After having covered a hundred *li*, he lost his way and failed to find the "Spring of the Wild Horses." To add to his distress he dropped the big water-skin he had been given at the fourth tower and lost its precious contents. "Besides, as the route made long détours, he no longer knew which direction to follow. He then meant to turn back to the east, towards the fourth signal-tower." But after having thus proceeded for 10 *li* he thought of his oath not to take his way again eastwards until he had reached India. "Thereupon fervently praying to Kuan-yin (Avalokiteśvara) he directed himself to the north-west. Looking all round he saw only limitless plains without discovering a trace of men or horses." At night he was troubled by lights lit by wicked spirits, and in daytime by terrible sandstorms. "In the midst of these severe trials his heart remained a stranger to fear." But he suffered cruel torments from thirst.

After having thus travelled for four nights and five days without water he lay down exhausted. In the middle of the fifth night after fervent prayers to Avalokiteśvara he felt refreshed by a cool breeze, and then found rest in short sleep. A divine vision seen in a dream roused him to a fresh effort. After about 10 *li* his horse, which also had found strength

* *Yeh-ma-ch'üan* is still a frequent designation for desert localities beyond the Kan-su border.

to get on its legs again, suddenly turned into another direction, and after a few more *li* carried him to a patch of green pasture. When he had allowed his horse to graze and was about to move on, he discovered a pool of clear water and realized that he was saved. Having halted a day at this spot, he continued his journey with a fresh supply of water and fodder, and after two more days emerged from the desert and arrived at I-wu or Hami.

If we compare this summarized account of Hsüan-tsang's desert crossing with the actual topography of the route from An-hsi to Hami, we cannot fail to recognize their close accord in essential points as well as an obvious lacuna in the text of the 'Life.' This makes the pilgrim proceed in a single march from the first signal-tower to the fourth. But this is clearly in contradiction with the previously quoted passage of the 'Life,' which records the information given to Hsüan-tsang at Kua-chou: "To the north-west beyond this Barrier there are five signal-towers. . . . They are 100 *li* apart, one from the other." We are thus obliged to assume that Hsüan-tsang in reality had to cover four marches from the river before reaching the fourth tower, and that in the narrative presented by the extant text two of these marches have been left unrecorded.

Once allowing for this lacuna, which unfortunately has its only too frequent counterparts in the 'Life' and is easily accounted for by the extant condition of its text, we can easily trace the stages and incidents of the desert journey. That the position indicated for the first signal-tower clearly points to the present Pei-tan-tzŭ, the first stage from An-hsi, has been shown above. The 480 *li* reckoned from the Su-lo Ho to the fifth signal-tower are in remarkably exact agreement with 96 miles marching distance recorded by cyclometer on our journey from the river to Hsing-hsing-hsia, the fifth halting-place on the present road. The statement about the dreaded Mo-ho-yen desert extending beyond the fifth signal-tower is in perfect accord with the marked change for the worse which the character of the ground exhibits after we leave Hsing-hsing-hsia. Nor is it difficult to prove that all the matter-of-fact indications which the narrative of Hsüan-tsang's experiences in this desert furnishes, are fully consistent with what the map shows us.

We read there that the traveller, having been advised to avoid the fifth signal-tower, *i.e.* Hsing-hsing-hsia, turned off from the main route at the fourth tower in order to reach the "Spring of the Wild Horses," at a distance of 100 *li*. When he failed to find this and thought of regaining the fourth tower, he is said to have turned back to the east for a short while. This makes it quite clear that the *Yeh-ma-ch'üan* spring to which he had been directed must have lain in a westerly direction. Now a look at the Russian Trans-frontier map shows that the route from Tun-huang to Hami, as surveyed by Captain Roborovsky's expedition, passes at a distance of about 30 miles west of Ma-lien-ching-tzu before joining the An-hsi–Hami road at K'u-shui, and that one of its halting-places with

water is to be found at about that distance to the west-north-west of Ma-lien-ching-tzŭ. Thus the existence, in the past or present, of a spring approximately in the position indicated for the Yeh-ma-ch'üan which Hsüan-tsang vainly sought for, becomes very probable. That the pilgrim unguided failed to find it is an experience with which I became only too often and painfully familiar myself when we made our way in September 1914 across unexplored portions of the Eastern Pei-shan (cf. *Geographical Journal*, 48, p. 200).

In any case it is certain that if at the present day a wayfarer from An-hsi had reason to avoid observation at Hsing-hsing-hsia he could do no better than leave the main route at Ma-lien-ching-tzŭ and strike to the west-north-west. He would have to cross there a continuation of what appears to be the highest of the decayed hill ranges of the Pei-shan, the one which the main road passes in tortuous gorges just above Hsing-hsing-hsia. On such ground it would obviously be difficult to follow a straight line, and this circumstance may well account for the passage in the narrative telling us that "as the route made long détours he no longer knew which direction to follow." After vainly searching for the "Spring of the Wild Horses," and a brief attempt to regain the fourth tower, we are told that Hsüan-tsang turned resolutely to the north-west and continued his journey undaunted by thirst and the perils of the desert. It was a resolve needing all the religious fervour aud courage of the great pilgrim, but it was also the wisest course to follow—for one who knew how to keep up that bearing. And that Hsüan-tsang fully possessed that instinct of the compass, so prevalent among Chinese of whatever condition, is abundantly proved by the topographical records he has left us in his 'Hsi-yü-chi.'

As the map shows, this course to the north-west was bound to carry the traveller across the utterly barren gravel glacis about K'u-shui down to the Yen-tun depression, and beyond this to the south-eastern edge of the loess belt, where subsoil drainage from the Karlik-tagh supports vegetation. We are told that on his progress across the Mo-ho-yen desert he went without water for four nights and five days, until after the refreshing rest of the fifth night his hardy mount carried him a few miles beyond to pasture and water in a pool. Here we find once again the approximate distance reckoning, as indicated by the record of the 'Life,' as closely concordant with the actual topography as we could reasonably expect; for we have seen that on the present caravan road five marches are needed to bring the traveller from Ma-lien-ching-tzŭ, *i.e.* the fourth signal-tower, to Chang-liu-shui, the first place with spring water and verdure on the Hami side, the total marching distance amounting to 106 miles.

There are likely to have been wells then as now on the regular route leading from the fifth watch-station to Hami, in positions corresponding, or near, to Sha-ch'üan-tzŭ, K'u-shui, Yen-tun. But how difficult, if not impossible, it would have been for Hsüan-tsang, once off the caravan track, to find them I know only too well from my own personal experience

on similar desert ground. The line he followed obviously lay more or less parallel to the route. Yet this might easily have remained hidden from him even if approached within a few miles.

That it was the scent or local sense of his horse which enabled Hsüan-tsang in the end to reach the saving spring before succumbing to thirst and exhaustion, distinctly strengthens my belief in the authenticity of the record as presented by Hui-li. We have been told in it before how Hsüan-tsang, when preparing for his adventure at Kua-chou, had wisely, by exchange for his own, secured this horse from an "old barbarian" who had ridden it more than fifteen times to Hami and back (see above, p. 270). The remarkable way in which horses and camels in the desert can scent water and grazing for considerable distances, or correctly locate such places remembered from previous visits is too well known to need my personal testimony. But I may well record this as regards the fact that a horse trained to desert travel may in the cold of a Central Asian winter well go on for five days without water. On my crossing of the Taklamakan to the Keriya River end our few ponies could not be watered for fully four days (see 'Desert Cathay,' 2, pp. 391 *sqq.*); yet, judging from their condition when we at last struck the river, they might probably have held out for a couple of days longer. (It is true, they were never ridden on this desert crossing.) It must also be noted that the going on the uniform gravel slopes and plateaus of the Pei-shan is far less tiring to horses and to men, too, than the crossing of dune-covered areas in Taklamakan.

The accuracy of the narrative preserved in the 'Life' asserts itself to the end; for the two more days which it makes Hsüan-tsang spend *en route* before reaching Hami correspond exactly to the two marches now reckoned from Chang-liu-shui to Hami town, a distance of some 35 miles. Thus we close the story as handed down in the 'Life' with the gratifying assurance that even this initial chapter of the pilgrim's travels, which in view of the grave perils and quasi-miraculous escape it records might most readily have lent itself to exaggeration and fiction, has retained in Hui-li's narration the form in which the Master of the Law himself is likely to have told it.